

Remarks/Arguments

A Supplemental Information Disclosure Statement is submitted herewith listing the contents of a third party submission under 37 C.F.R. 1.99 dated July 21, 2003. Copies of the cited references have been omitted as such copies presumably were provided via the third party submission.

As suggested by the Examiner, claim 4 has been amended to depend from claim 1.

§102 Rejections

Claims 1-2, 11-12, 21-22, 58, 61, and 64 stand rejected under 35 USC 102(b) as anticipated by Vebeliunas (U.S. Pat. No. 6,107,533). Applicants respectfully submit that Vebeliunas does not teach each and every element of the claimed invention. The Examiner relies upon Fig. 3 of Vebeliunas, which is a front-end deethanizer process. As shown in Fig. 3, deethanizer 22 separates the C_3^+ stream from the C_2^- stream. The overhead C_2^- stream 23 from the deethanizer 22 is then routed to the demethanizer 19, wherein a C_1^- stream is recovered via overhead stream 20 and C_2 is fed to an acetylene converter 25. Thus, Vebeliunas teaches removing acetylene from a C_2 stream after the C_1^- has been removed therefrom via a demethanizer. This C_1^- stream contains hydrogen, thus the subsequent removal of acetylene via hydrogenation will require the addition of hydrogen in or prior to the acetylene converter 25. In contrast, Applicants claim hydrogenating a C_2^- stream, which contains both C_1^+ and C_2 and does not require the added expense of a demethanizer nor the addition of hydrogen in or prior to the acetylene converter. Specifically, claims 1 and 58 each recite "hydrogenating said C_2^- stream", and claims 11 and 61 each recite "hydrogenating said pressurized C_2^- stream".

Claims 21 and 64 each recite removal of acetylene from a cracked gas stream prior to feeding the cracked gas stream to a deethanizer, which is not taught or suggested by Vebeliunas.

The focus of Vebeliunas is the use of a novel hydrogenation unit located on either a side draw or reboiler circuit of, for example, a deethanizer unit, as noted at col. 3, lines 64-68 and col. 4, lines 1-2 and 42-56 relied upon by the Examiner. Such hydrogenation unit is integral with the deethanizer, as is shown in Figs. 1A and 1B, in that it is not hydrogenation of a feed stream to the deethanizer or a product stream from the deethanizer. In contrast, Applicants recite hydrogenation of a feed stream to the deethanizer (e.g., claims 21 and 64) or hydrogenation of an overhead C₂- stream from a deethanizer (e.g., claims 1, 11, 58, and 61). Applicants respectfully submit that Vebeliunas does not teach each and every element of, and therefore does not anticipate, independent claims 1 (and claim 2 depending therefrom), 11 (and claim 12 depending therefrom), 21 (and claim 22 depending therefrom), 58, 61 and 64.

§103 Rejections

Independent claims 31, 40, 49, 67, 70, and 73 stand rejected under 35 USC as obvious in view of Vebeliunas. Applicants respectfully submit that Vebeliunas does not teach or suggest each element of the claimed invention, and therefore a prima facie case of obviousness does not exist. Specifically, claims 31, 40, 67, and 70 each recite “hydrogenating said pressurized C₂- stream”, which is not disclosed by Vebeliunas as described previously. Claims 49 and 73 each recite removal of acetylene from a cracked gas stream prior to feeding the cracked gas stream to a deethanizer, which is not disclosed by Vebeliunas as described previously. Furthermore, there is no teaching or suggestion to modify Vebeliunas to obtain Applicants’ claimed process. As recited in each of the independent claims, Applicants’ have disclosed and claimed a process for producing a dilute ethylene stream alone or in combination with a dilute propylene stream, which are used as feedstock to produce olefin-based derivatives such as ethylbenzene, cumene, acrylic acid, and propylene oxide. As would be apparent to one of skill in the art, Vebeliunas is related to processes

that produce high purity, polymer grade ethylene and propylene, as evidenced by the use of ethane and propane splitters to produce high purity product streams. Given the difference in desired products between Applicants (i.e., a dilute ethylene stream alone or in combination with a dilute propylene stream) and Vebeliunas (polymer grade ethylene and propylene), there would be no motivation or suggestion to modify Vebeliunas, for example by removing the demethanizer downstream of the deethanizer. Therefore, Applicants respectfully submit that a prima facie case of obviousness does not exist as to independent claims 31, 40, 49, 67, 70, and 73.

Dependent claims 3-10, 13-20, 23-30, 32-39, 41-48, 50-58, 59, 60, 62, 63, 65, 66, 68, 69, 71, 72, 74, and 75 stand rejected under 35 USC 103 as obvious in view of the primary reference Vebeliunas either alone or in combination with various secondary references. Due to the deficiencies in the primary reference as described above with respect to independent claims 1, 11, 21, 31, 40, 49, 67, 70, and 73, a prima facie case of obviousness likewise does not exist as to claims 3-10, 13-20, 23-30, 32-39, 41-48, 50-58, 59, 60, 62, 63, 65, 66, 68, 69, 71, 72, 74, and 75 depending therefrom for the same reasons. Furthermore, assuming (without conceding) that the combination of Vebeliunas with one or more secondary references is proper, the secondary references are being relied upon as disclosing additional elements recited in the dependent claims, and not for making up for the lack of teaching of the primary reference with respect to the independent claims. Therefore, Applicants respectfully submit that a prima facie case of obviousness does not exist as to claims 3-10, 13-20, 23-30, 32-39, 41-48, 50-58, 59, 60, 62, 63, 65, 66, 68, 69, 71, 72, 74, and 75.

Conclusi n

Applicants respectfully submit that the present application as amended is in condition for allowance. If the Examiner has any questions or comments or otherwise feels it would be helpful in expediting the application, he is encouraged to telephone the undersigned at (972) 731-2288. The Commissioner is hereby authorized to charge payment of any fee associated with any of the foregoing papers submitted herewith to Deposit Account No. 50-1515, Conley Rose, P.C.

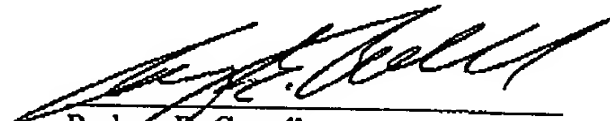
Respectfully submitted,

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